King and Snohomish Counties, Washington
Cooperating Technical Partners
Mapping Activity Statement

MAPPING ACTIVITY STATEMENT –DIGITAL FLOOD INSURANCE RATE MAP PRODUCTION AND DEVELOPMENT OF UPDATED FLOOD HAZARD DATA

This Mapping Activity Statement (MAS) has been issued in accordance with the Cooperating Technical Partners (CTP) Partnership Agreement dated September 26, 2000, between the King County and the Federal Emergency Management Agency (FEMA), and the CTP Partnership Agreement dated September 10, 2003, between Snohomish County and FEMA. This MAS, which is MAS No. 2 for King County and MAS No. 1 for Snohomish County, is as follows.

SECTION 1—OBJECTIVE AND SCOPE

The objective of the Flood Map Project documented in this MAS is to develop updated Digital Flood Insurance Rate Maps (DFIRMs) and Flood Insurance Study (FIS) reports for the incorporated and unincorporated areas of King and Snohomish Counties, Washington. The incorporated areas that may be affected by this updated DFIRM and FIS are the Cities of Carnation, Duvall and Monroe. The DFIRM and FIS report shall be produced in the FEMA Countywide Format.

In addition, the Mapping Partners involved in this project shall develop updated flood hazard data for the lower portions of the Snoqualmie and Skykomish Rivers using detailed-study methods. The study for the Lower Snoqualmie River will extend from its mouth to Snoqualmie Falls, near the City of Snoqualmie (a distance of approximately 40 miles). The study for the Skykomish River will extend from its mouth near the State Highway 522 bridge, to just upstream of the Chicago, Milwaukee, St. Paul and Pacific Railroad bridge (a distance of 8.0 miles).

This Flood Map Project shall be completed by the following Mapping Partners:

- King County Department of Natural Resources and Parks;
- A contractor selected by King County, in consultation with Snohomish County and FEMA, to perform the detailed studies for the Lower Snoqualmie and Skykomish Rivers (hereinafter referred to as Local SC);
- Snohomish County, and
- Michael Baker Jr., Inc., the FEMA Flood Map Production Coordination Contractor (MCC) for this Flood Map Project.

The activities for this Flood Map Project, including required Quality Assurance/Quality Control (QA/QC) reviews, and the Mapping Partners that will complete them are summarized in Table 1-1. In Table 1-1, King County and Snohomish Counties are separately identified as " King CTP" and "Snohomish. CTP." Activities to be accomplished by Local SC are included in the "King CTP" column. Activities to be

accomplished by Snohomish County, including contractors that may be selected after the project startup, are included in the "Snohomish CTP" column.

The sections of this MAS that follow Table 1-1 describe the specific mapping activities associated with this Flood Map Project. Each activity description identifies the responsible Mapping Partner(s), the FEMA standards that must be met, and resultant component(s).

Table 1-1. Planned Mapping Activities and Project Team Assignments

Activity	King CTP	Snohomish CTP	FEMA (MCC)
Activity 1 – Field Surveys and Reconnaissance	X	X	
Activity 2 – Topographic Data Development	X	X	
Activity 3 – Independent QA/QC Review of Topographic Data			X
Activity 4 –Hydrologic Analyses	X		
Activity 5–Independent QA/QC Review of Hydrologic Analyses			X
Activity 6 – Hydraulic Analyses	X		
Activity 7 – Independent QA/QC Review of Hydraulic Analyses			X
Activity 8 – Floodplain Mapping (Detailed Riverine Analysis)	X		
Activity 9 – Independent QA/QC Review of Floodplain Mapping (Revised Areas)			X
Activity 10 – Base Map Acquisition and Preparation	X	X	
Activity 11 – DFIRM Production (Merging Revised and Non-Revised Information)			X
Activity 12 – DFIRM Production (Application of FEMA Graphics and Database Specifications)			X
Activity 13 – Preliminary DFIRM and FIS Report Distribution			X
Activity 14 – Post-Preliminary Processing	X	X	X
Activity 15 – Project Coordination	X		X
Activity 16 – Contract Administration	X		

Activity 1 - Field Surveys and Reconnaissance

Responsible Mapping Partners: King and Snohomish Counties, and Local SC

Scope: Local SC shall conduct a detailed field reconnaissance of the specified study area. King and Snohomish Counties will assist in this activity. The purpose of this reconnaissance is to determine conditions along the floodplain(s), types and numbers of hydraulic and/or flood-control structures, apparent maintenance status of existing hydraulic structures, locations of cross sections to be surveyed, and other parameters needed for the hydrologic and hydraulic analyses. In addition to the initial field reconnaissance, the Local SC shall conduct field surveys of the Lower Snoqualmie and Skykomish Rivers, including obtaining channel bathymetry, high-water marks and floodplain cross sections, identifying or establishing Temporary Bench Marks, and obtaining the physical dimensions of hydraulic and flood-control structures. The Local SC shall reference survey data to the North American Datum of 1983 (NAD83) and the North American Vertical Datum of 1988 (NAVD88). The Local SC also shall provide the conversion factor for converting elevation data from the National Geodetic Vertical Datum of 1929 (NGVD 20) to NAVD88.

Standards: All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the Technical Support Data Notebook (TSDN) format requirements described in Appendix M of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners*, the Local SC shall make the following products available to FEMA:

- A report summarizing the findings of the field reconnaissance;
- Maps and drawings that provide the detailed survey results; and
- A survey notebook containing cross-sections and structural data.

Appendix M may be viewed or downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 2 - Topographic Data Development

Responsible Mapping Partners: King and Snohomish Counties and Local SC

Scope: To supplement the field surveys conducted under Activity 1, King and Snohomish Counties and/or the Local SC shall obtain additional topographic data of the overbank areas of flooding sources studied to delineate floodplain boundaries. Specifically, new topographic data shall be generated for the Lower Snoqualmie and Skykomish Rivers using airborne Light Detection and Ranging (LIDAR) technology. Contour interval and/or accuracy for the topographic data shall be selected based on the current FEMA requirements as documented in *Guidelines and Specifications for Flood Hazard Mapping Partners*. The Local SC shall reference topographic data to NAD83 and NAVD88 and shall provide the conversion factor for converting elevation data from NGVD29 to NAVD88.

River channel bathymetry and overbank topographic data sets will be merged to generate floodplain cross-sections.

For this activity, King and Snohomish Counties and/or the Local SC also shall develop topographic maps and/or Digital Elevation Models (DEMs) for the subject flooding sources using the data collected under Activities 1 and 2. Unless directed to do otherwise by FEMA, all new topographic data must be developed and submitted in digital format. In addition, King and Snohomish Counties, and/or the Local SC, shall address all concerns or questions regarding Activity 2 that are raised by the MCC during the independent QA/QC review under Activity 3.

Standards: All work under Activity 2 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: Upon completion of topographic data collection and processing for the Lower Snoqualmie and Skykomish Rivers, these data shall be submitted to the MCC for an independent QA/QC review under Activity 3. In accordance with the TSDN format requirements described in Appendix M of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners*, the Local SC shall make the following products available to FEMA:

- Hardcopy topographic maps;
- Report summarizing methodology and results;
- Mass points and breaklines data on CD-ROM;
- Digital work map with contours;
- Checkpoint analyses to assess the accuracy of data including Root Mean Square Error (RMSE) calculations to support vertical accuracy;
- Identification of remote-sensing data voids and methods used to supplement data voids;
- National Geodetic Survey data sheets for Network Control Points used to control remote sensing and ground surveys;
- Metadata compliant with Federal Geographic Data Committee standards.

Appendix M may be viewed or downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 3 - Independent QA/QC Review of Topographic Data

Responsible Mapping Partner: FEMA (MCC)

Scope: The MCC shall review the mapping data generated by King and Snohomish Counties and the Local SC under Activity 2 to ensure that these data are consistent with FEMA standards as well as standard engineering practice and are sufficient to revise the DFIRMs.

Standards: All work under Activity 3 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format requirements described in Appendix M of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners*, the MCC shall make the following products available to FEMA:

- A Summary Report that describes the findings of the independent QA/QC review; and

- Recommendations to resolve any problems that arise as a result of the independent QA/QC review.

Appendix M may be viewed or downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 4 – Hydrologic Analyses

Responsible Mapping Partners: King County and Local SC

Scope: The Local SC shall perform hydrologic analyses for approximately 693 square miles of drainage area for the Snoqualmie River and 841square miles of drainage area for the Skykomish River. The Local SC shall determine the hydrologic methods to be used for these analyses through an assessment of the following methods: flood-frequency analysis of gages, regional regression equations, or application of an existing HSPF model. (King County is developing an uncalibrated HSPF model for the Snoqualmie River basin that may be used.)

The Local SC shall calculate peak flood discharges for the 10-, 2-, 1- and 0.2-percent-annual-chance storm events for the Snoqualmie and Skykomish Rivers. These flood discharges shall be the basis for subsequent hydraulic analyses of the subject flooding sources under Activity 6. In addition, the Local SC shall address all concerns or questions regarding Activity 4 that are raised by the MCC during the independent QA/QC review under Activity 5.

Standards: All work under Activity 4 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: Upon completion of hydrologic modeling for the Snoqualmie and Skykomish Rivers, the Local SC shall submit the results to the MCC for an independent QA/QC review under Activity 5.

In accordance with the TSDN format requirements described in Appendix M of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners*, the Local SC shall make the following products available to FEMA:

- Digital copies of all hydrologic modeling (input and output) files for the 10-, 2-, 1-, and 0.2-percent-annual-chance storm events;
- Digital and hardcopy versions of Summary of Discharges table(s) presenting discharge data for the flooding sources for which hydrologic analyses were performed;
- Digital and hardcopy versions of draft text for Section 3.1, Hydrologic Analyses, of FIS report; and
- Digital and hardcopy versions of all backup data used in the analysis, including work maps.

Appendix M may be viewed or downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 5 - Independent QA/QC Review of Hydrologic Analyses

Responsible Mapping Partner: FEMA (MCC)

Scope: The MCC shall review the technical, scientific, and other information submitted by the Local SC under Activity 4 to ensure that the data and modeling are consistent with FEMA standards and standard engineering practices and are sufficient to revise the DFIRMs. This work shall include, at a minimum, the activities summarized below.

- Review submittal for technical and regulatory adequacy, completeness of required information, and supporting data and documentation. The technical review shall focus on the following:
  - Use of acceptable models;
  - Use of appropriate methodology(ies);
  - Correctly applied methodology(ies)/model(s), including QC of input parameters;
  - Comparison with gage data and/or regression equations, if appropriate; and
  - Comparison with discharges for contiguous reaches or flooding sources.
- Maintain records of all contacts, reviews, recommendations, and actions and make them readily available to FEMA.
- Maintain an archive of all data submitted for hydrologic modeling review. All supporting data should be retained for 3 years from the date funding recipient submits its final expenditure report to FEMA.

Standards: All work under Activity 5 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format requirements described in Appendix M of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners*, the MCC shall make the following products available to FEMA:

- A Summary Report that describes the findings of the independent QA/QC review; and
- Recommendations to resolve any problems that arise as a result of the QA/QC review.

Appendix M may be viewed or downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 6 – Hydraulic Analyses

Responsible Mapping Partners: King County and Local SC

Scope: The Local SC shall perform hydraulic analyses for approximately 40 miles of the Lower Snoqualmie River and approximately 8.0 miles of the Skykomish River. For these flooding sources, studied by detailed methods, the hydraulic modeling shall include the 10-, 2-, 1- and 0.2-percent-annual-chance storm events based on peak discharges computed under Activity 4. The hydraulic method used for this analysis shall include the standard step backwater model HEC-RAS.

The Local SC shall use cross-section and field data collected under Activity 1 to perform the hydraulic analyses. The hydraulic analyses shall be used to establish flood elevations and regulatory floodways for

the subject flooding sources. The Local SC shall use the FEMA CHECK-RAS checking program to check the reasonableness of the hydraulic analyses. To facilitate the independent QA/QC review under Activity 7, the Local SC shall provide explanations for unresolved messages from the CHECK-RAS program, as appropriate. In addition, the Local SC shall address all concerns or questions regarding Activity 6 that are raised by the MCC during the independent QA/QC review under Activity 7.

Standards: All work under Activity 6 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: Upon completion of hydraulic modeling for the Lower Snoqualmie and Skykomish Rivers, the Local SC shall submit the results to the MCC for an independent QA/QC review under Activity 7. In accordance with the TSDN format requirements described in Appendix M of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners*, the Local SC shall make the following products available to FEMA:

- Digital profiles of the 10-, 2-, 1- and 0.2-percent-annual-chance water-surface elevations representing existing conditions using FEMA's RASPLOT program or similar software;
- Digital and hardcopy versions of the Floodway Data Table for each flooding source that is compatible with the DFIRM database;
- Digital and hardcopy versions of all hydraulic modeling (input and output) files;
- Digital and hardcopy versions of a table showing the range of Manning's "n" values used;
- Explanations for unresolved messages from CHECK-RAS program, as appropriate;
- Digital and hardcopy versions of all backup data used in the analyses; and
- Digital and hardcopy versions of draft text for inclusion in the FIS report.

Appendix M may be viewed or downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf

Activity 7 - Independent QA/QC Review of Hydraulic Analyses

Responsible Mapping Partner: FEMA (MCC)

Scope: The MCC shall review the technical, scientific, and other information submitted by the Local SC under Activity 6 to ensure that the data and modeling are consistent with FEMA standards and standard engineering practices and are sufficient to revise the DFIRMs. This independent QA/QC review of the hydraulic analyses shall include, at a minimum, the activities summarized below.

- Review submittal for technical and regulatory adequacy, completeness of required information, and supporting data and documentation. The technical review shall focus on the following:
  - Use of acceptable models;
  - Starting water-surface elevations;
  - Cross-section geometry;
  - Manning's "n" values and expansion/contraction coefficients;
  - Bridge and culvert modeling;

- Flood discharges;
- Regulatory floodway computation methods; and
- Tie-ins to upstream and downstream non-revised profiles.

- Use the CHECK-RAS program to flag potential problems and focus review efforts.
- Maintain records of all contacts, reviews, recommendations, and actions and make them readily available to FEMA.
- Maintain an archive of all data submitted for hydraulic modeling review. (All supporting data must be retained for 3 years from the date funding recipient submits its final expenditure report to FEMA.)

Standards: All work under Activity 7 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format requirements described in Appendix M of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners*, the MCC shall make the following products available to FEMA:

- A Summary Report that describes the findings of the independent QA/QC review; and
- Recommendations to resolve any problems that arise as a result of the independent QA/QC review.

Appendix M may be viewed or downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 8 – Floodplain Mapping (Detailed Riverine Analysis)

Responsible Mapping Partners: King County and Local SC

Scope: The Local SC shall delineate the 1- and 0.2-percent-annual-chance floodplain and regulatory floodway boundaries for the Lower Snoqualmie and Skykomish Rivers. The Local SC shall incorporate all revised hydrologic and hydraulic modeling and shall use the topographic data acquired under Activity 2 to delineate the floodplain and regulatory floodway boundaries on a digital work map. In addition, the Local SC shall incorporate the results of all effective Letters of Map Change (LOMCs) within the revised areas as appropriate. Also, the Local SC shall address all concerns or questions regarding Activity 8 that are raised by the MCC during the independent QA/QC review under Activity 9.

Standards: All work under Activity 8 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: Upon completion of floodplain mapping for the Lower Snoqualmie and Skykomish Rivers, the Local SC shall submit the results to the MCC for an independent QA/QC review under Activity 9. In accordance with the TSDN format requirements described in Appendix M of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners*, the SC shall make the following products available to FEMA:

- Digital work maps showing the 1- and 0.2-percent-annual-chance floodplain boundary delineations, regulatory floodway boundary delineations, cross sections, Base Flood Elevations (BFEs), flood insurance risk zone labels, and all applicable base map features;

- DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Metadata files describing the DFIRM data, including all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Complete set of plots of DFIRM panels showing all detailed flood hazard information at a suitable scale;
- A Summary Report that describes and provides the results of all automated or manual QA/QC review steps taken during the preparation of the DFIRM; and
- Any backup or supplemental information used in the mapping required for the independent QA/QC review outlined in Activity 9.

Appendix M may be viewed or downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 9 - Independent QA/QC Review of Floodplain Mapping (Revised Areas)

Responsible Mapping Partner: FEMA (MCC)

Scope: The MCC shall review the floodplain mapping submitted by the Local SC under Activity 8 to ensure that the results of the analyses performed are accurately represented. This work shall include, at a minimum, the following activities:

- Review the cross sections for proper location and orientation on the work map and agreement with the Floodway Data Table.
- Review the BFEs shown on the work maps for proper location and agreement with the results of the hydraulic modeling.
- Review the regulatory floodway widths shown on the work maps for agreement with the widths shown in the Floodway Data Table and the results of the hydraulic modeling.
- Review the floodplain boundaries shown on the work maps for agreement with the flood elevations shown in the Floodway Data Table and the contour lines and other topographic information shown on the work maps.
- Review the floodplain widths at cross sections as shown on the work maps to ensure they match the widths shown on the Floodway Data Table.
- Review the floodplain boundaries shown on the work maps to ensure they match the Flood Profiles.
- Review the flood insurance risk zone designations shown on the work maps to ensure they are properly labeled.
- Review the DFIRM mapping files to ensure they were prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*.
- Review the metadata files to ensure they include all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*.

Standards: All work under Activity 9 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format requirements described in Appendix M of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners*, the MCC shall make the following products available to FEMA:

- A Summary Report that describes the findings of the independent QA/QC review noting any deficiencies in or agreeing with the mapping results;
- Recommendations to resolve any problems that are identified during the independent QA/QC review; and
- An annotated work map with all questions and/or concerns indicated if necessary.

Appendix M may be viewed or downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 10 - Base Map Acquisition and Preparation

Responsible Mapping Partners: King County, Snohomish County, and Local SC

Scope: Activity 10 consists of obtaining the digital aerial photographic base map for the project. The required activities are as follows:

- Obtain digital files (raster or vector) of the base map;
- Secure necessary permissions from the map source to allow FEMA's use and distribution of hardcopy and digital map products using the digital base map, free of charge;
- Certify that the digital data meet the minimum standards and specifications that FEMA requires for DFIRM production; and
- Populate the DFIRM database for base map features and applicable data.

Standards: All work under Activity 10 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format requirements described in Appendix M of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners*, King County and the Local SCshall make the following products available to FEMA:

- Written certification that the digital data meet the minimum FEMA standards and specifications; and
- Documentation that FEMA can use the digital base map.

Appendix M may be viewed or downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 11 – DFIRM Production (Merging Revised and Non-Revised Information)

Responsible Mapping Partner: FEMA (MCC)

Scope: Upon completion of Activity 8 for the revised flooding sources, the MCC shall merge the digital floodplain data for the revised areas with the existing digital data for the non-revised areas to create the revised DFIRMs. This work will include tie-in of flood hazard information for the areas that were not studied as part of the Flood Map Project documented in this MAS. Also, the MCC shall tie in the revised and non-revised Flood Profiles, floodplain boundaries, and regulatory floodway boundaries for the areas that were not studied as part of the Flood Map Project documented in this MAS. The MCC shall coordinate with FEMA, King and Snohomish Counties, and the Local SC, as necessary, to resolve any potential tie-in issues.

Standards: All work under Activity 11 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format requirements described in Appendix M of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners*, the MCC shall make the following products available to FEMA:

- Digital work maps showing the 1- and 0.2-percent-annual-chance floodplain boundary delineations, regulatory floodway boundary delineations, cross sections, Base Flood Elevations (BFEs), flood insurance risk zone labels, and all applicable base map features;
- DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Metadata files describing the DFIRM data, including all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Complete sets of plots of DFIRM panels showing all detailed flood hazard information at a suitable scale; and
- A Summary Report that describes and provides the results of all automated or manual QA/QC review steps taken during the preparation of the revised DFIRMs.

Appendix M may be viewed or downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 12 – DFIRM Production (Application of FEMA Graphics and Database Specifications)

Responsible Mapping Partner: FEMA (MCC)

Scope: The MCC shall apply the final FEMA DFIRM graphics and database specifications to the revised DFIRM files produced under Activity 12. This work shall include adding all required annotation, line patterns, area shading, and map collar information (e.g., map borders, title blocks, legends, notes to user). The MCC also shall coordinate with FEMA and the other Mapping Partners, as necessary, to resolve any problems that are identified during Activity 12.

Standards: All work under Activity 12 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format requirements described in Appendix M of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners*, the MCC shall make the following products available to FEMA:

- DFIRM panels showing 1- and 0.2-percent-annual-chance floodplain boundary delineations, cross sections, BFEs, flood insurance risk zone designation labels, and all applicable base map features;
- DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- DFIRM database files, as appropriate, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Metadata files describing the DFIRM data, including all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Complete sets of plots of DFIRM panels showing all effective and revised flood hazard information at a suitable scale; and
- A Summary Report that describes and provides the results of all automated manual QC review steps taken during the preparation of the revised DFIRMs.

Appendix M may be viewed or downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 13 – Preliminary DFIRM and FIS Report Distribution

Responsible Mapping Partners: FEMA (MCC)

Scope: Activity 13 consists of the final preparation, review, and distribution of the Preliminary copies of the DFIRMs and FIS reports for community and public review and comment. The activities to be performed are summarized below.

Preliminary Transmittal Letter Preparation. The MCC shall prepare letters to transmit the Preliminary copies of the DFIRMs and FIS reports and related enclosures to all affected communities, all other Project Team members, the State NFIP Coordinator, the FEMA Regional Office, and others as directed by FEMA.

FIS Report Preparation: The MCC shall maintain the FIS reports in the FEMA Countywide Format following the FEMA requirements specified in Appendix J of *Guidelines and Specifications for Flood Hazard Mapping Partners*.

Final QA/QC Review of DFIRMs and FIS Reports: The MCC shall conduct a final QA/QC review of the Preliminary DFIRMs and FIS reports, including all data tables, Flood Profiles, and other components of the FIS reports, as appropriate. The QA/QC procedures shall be consistent with *Guidelines and Specifications for Flood Hazard Mapping Partners*.

Discrepancy Resolution: The MCC shall work with FEMA, the Local SC, and King and Snohomish Counties to resolve discrepancies identified during the final QA/QC review.

Distribution of Preliminary DFIRM and FIS Report: The MCC shall distribute the Preliminary copies of the DFIRMs and FIS reports to the affected communities, all other Project Team members, the State NFIP Coordinator, the FEMA Regional Office, and others as directed by FEMA.

News Release Preparation: The MCC shall prepare news release notifications of BFE changes as appropriate and perform QA/QC reviews of the notifications for accuracy and compliance with FEMA format requirements. The MCC shall file the notifications for later submittal to FEMA for review and approval.

Preliminary Summary of Map Actions (SOMA) Preparation: The MCC shall prepare Preliminary SOMAs for affected communities if appropriate. The SOMAs shall list pertinent information regarding LOMCs that will be affected by the issuance of the DFIRMs (i.e., superseded, incorporated, revalidated).

Standards: All work under Activity 13 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format requirements described in Appendix M of FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners*, the MCC shall make the following products available when requested by FEMA:

- Preliminary transmittal letters shall be prepared. These letters and any additional letters requested by FEMA shall be prepared in accordance with the current version of the FEMA *Document Control Procedures Manual.*
- Preliminary copies of the DFIRMs and FIS reports, including all updated data tables and Flood Profiles, shall be mailed to the community Chief Executive Officer (CEO) and floodplain administrator of each affected community in King and Snohomish Counties, the State NFIP Coordinator, the FEMA Regional Office, and others as directed by FEMA.
- Preliminary SOMAs for affected communities, prepared in accordance with FEMA requirements, shall be provided if appropriate.
- Revised DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*, shall be provided on CD-ROM;
- Revised DFIRM database files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners,* shall be provided on CD-ROM.
- Revised metadata files describing the DFIRM data, including all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners,* shall be provided on CD-ROM.
- A Summary Report that describes and provides the results of all automated or manual QA/QC review steps taken during the preparation of the DFIRMs shall be provided.

Appendix M may be viewed or downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 14 - Post-Preliminary Processing

Responsible Mapping Partners: FEMA (MCC), King and Snohomish Counties, and Local SC

Scope: Activity 14 consists of finalizing the DFIRMs and FIS reports after the Preliminary copies of the DFIRMs and FIS reports have been issued for community officials and the public for review and comment. The activities to be performed are summarized below.

Initiation of Statutory 90-Day Appeal Period: When required, upon completion of a 30-day community comment period and/or final coordination meeting with the community, the MCC shall arrange for and verify that the following activities are completed in accordance with the current version of the FEMA *Guidelines and Specifications for Flood Hazard Mapping Partners* and *Document Control Procedures Manual*:

- Proposed BFE determination letters are sent to the community CEOs and floodplain administrators as appropriate.
- News releases are published in prominent newspapers with local circulation.
- The appropriate notices (Proposed Rules) are published in the *Federal Register*.

Resolution of Appeals and Protests: King and Snohomish Counties, the Local SC, and the MCC shall support FEMA in reviewing and resolving appeals and protests received during the 90-day appeal period. For each appeal and protest, the following activities shall be conducted as appropriate:

- Initial processing and acknowledgment of the submittal;
- Technical review of the submittal;
- Preparation of letters requesting additional supporting data;
- Performance of revised analyses; and
- Preparation of the draft resolution letter and revised DFIRM and FIS report materials for FEMA review.

The MCC shall mail all associated correspondence (and enclosures, if appropriate) upon authorization by FEMA.

Preparation of Special Correspondence: King and Snohomish Counties, the Local SC, and the MCC shall support FEMA in responding to comments not received within the 90-day appeal period (referred to as "special correspondence"), including drafting responses for FEMA review when appropriate and finalizing responses when requested by FEMA. The MCC also shall mail the final correspondence (and enclosures if appropriate) and distribute appropriate copies of the correspondence and enclosures upon receipt of authorization from FEMA.

Revision of DFIRMs and FIS Reports: If necessary, King and Snohomish Counties, the Local SC, and the MCC shall work together to revise the DFIRMs and FIS reports at the direction of the FEMA Regional Project Officer and distribute Revised Preliminary copies of the DFIRMs and FIS reports to the

CEOs and floodplain administrators of the affected communities, all other Project Team members, the State NFIP Coordinator, the FEMA Regional Office, and others as directed by FEMA.

Final SOMA Preparation: The MCC shall prepare Final SOMAs for affected communities as appropriate.

Processing of Letters of Final Determination: The MCC shall work with FEMA to establish the effective dates for the DFIRMs and FIS reports, and shall prepare a Letter of Final Determination (LFD) for each affected community for FEMA review in accordance with the FEMA *Document Control Procedures Manual*. The MCC also shall mail the final signed LFDs and enclosures and distribute appropriate copies of the signed LFDs and enclosures upon receipt of authorization from FEMA.

Processing of Final DFIRMs and FIS Reports for Printing: The MCC shall prepare final reproduction materials for the DFIRMs and FIS reports and provide these materials to the FEMA Map Service Center for printing by the U.S. Government Printing Office. The MCC also shall prepare the appropriate paperwork to accompany the DFIRMs and FIS reports (including Print Processing Worksheets, Printing Requisition Forms, and Community Map Actions Forms) and transmittal letters to the community CEOs.

Revalidation Letter Processing: The MCC shall prepare and distribute letters to the community CEOs and floodplain administrators, as appropriate, to notify the communities about LOMCs for which determinations will remain in effect after the DFIRMs and FIS reports become effective.

Archiving Data: The MCC shall ensure the engineering backup data and related correspondence are packaged in the FEMA-required TSDN format and stored properly in the library archives.

Standards: All work under Activity 14 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the requirements provided in the current versions of the FEMA *Guidelines and Specifications for Flood Hazard Mapping Partners* and *Document Control Procedures Manual*, the MCC shall make the following products available to FEMA:

- Documentation that the news releases were published in accordance with FEMA requirements;
- Documentation that the appropriate *Federal Register* notices (Proposed and Final Rules) were published in accordance with FEMA requirements;
- Draft and final Special Correspondence (and all associated enclosures, backup data, and other related information) for FEMA review and signature as appropriate;
- Draft and final Appeal and Protest acknowledgment, additional data, and resolution letters (and all associated enclosures, backup data, and other related information) for FEMA review and signature as appropriate;
- Draft and final LFDs (and all associated enclosures, backup data, and other related information) for FEMA review and signature;
- DFIRM negatives and final FIS report materials, including all updated data tables and Flood Profiles;
- Paperwork for the final DFIRM and FIS report materials;

- Transmittal letters for the printed DFIRMs and FIS reports;
- LOMC Revalidation Letters if appropriate; and
- Complete, organized archived technical and administrative support data.

Appendix M may be viewed or downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 15 – Project Coordination

Responsible Mapping Partners: King County and FEMA (MCC)

Scope: Throughout the project, King County and the MCC shall coordinate, as necessary, to ensure the products meet the technical and format specifications required and contain accurate, up-to-date information. Coordination activities shall include:

- Meetings, teleconferences, and videoconferences with FEMA, Washington State Department of Ecology, Snohomish County, and interested public and private stakeholders;
- Telephone conversations with FEMA and other Project Team members on a scheduled basis, at least monthly and an ad hoc basis, as required;
- Updates to the Monitoring Information on Contracted Studies (MICS) system, Mapping Needs Update Support System (MNUSS) database, and other FEMA status information systems in accordance with requirements in Volumes 1 and 3 of *Guidelines and Specifications for Flood Hazard Mapping Partners*; and
- E-mail, facsimile transmissions, and letters, as required.

Standards: All work under Activity 15 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format requirements described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, King County and the MCC shall make the following products available to FEMA as required:

- Records of meetings, teleconferences, and videoconferences held with FEMA, Snohomish County, and other interested public and private stakeholders regarding the project;
- Records of telephone conversations held with FEMA and other Project Team members regarding the project;
- Updates to the MICS system and MNUSS database; and
- Copies of e-mail messages, facsimile transmissions, and letters regarding the project.

Activity 16 – Contract Administration

Responsible Mapping Partner: King County

Scope: King County shall ensure that procurement of contractors for work on this Flood Map Project complies with the requirements of 44 CFR 13.36, which may be downloaded from the U.S. Government Printing Office Web site at http://www.access.gpo.gov/nara/cfr/waisidx_02/44cfr13_02.html. In addition, King County shall comply with the reporting and other requirements of the Cooperative Agreement with FEMA through which funding for the Flood Map Project documented in this MAS is being provided. (See Section 4 of this MAS for additional information.

Standards: All work under Activity 16 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: King County shall make the following products available to FEMA:

- Quarterly and final project financial reports, using FEMA Form 20-10, in accordance with Cooperative Agreement Article V; and
- Quarterly performance reports, prepared in accordance with Cooperative Agreement Article V, that compare actual accomplishments to the objectives established for the reporting period; reasons for slippage if established objectives were not met; and additional pertinent information including, when appropriate, analysis and explanation of cost overruns or high unit costs.

SECTION 2—TECHNICAL AND ADMINISTRATIVE SUPPORT DATA SUBMITTAL

The Project Team members for this Flood Map Project that have responsibilities for activities included in this MAS shall comply with the data submittal requirements summarized below.

All supporting documentation for the activities in this Mapping Activity Statement shall be submitted in the TSDN format in accordance with Appendix M of the FEMA *Guidelines and Specifications for Flood Hazard Mapping Partners*, dated February 2002. Appendix M is available for viewing or download on the FEMA Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf. Table 2-1 indicates the sections of the TSDN that apply to each mapping activity.

If any issues arise that could affect the completion of an activity within the proposed scope or budget, the responsible Mapping Partner shall complete a Special Problem Report (SPR) as soon as possible after the issue is identified and submitted to FEMA. The SPR is to describe the issue and propose possible resolutions. (For additional information on SPRs, refer to Appendix M, Subsection M.2.1.1 of *Guidelines and Specifications for Flood Hazard Mapping Partners*.)

Additionally, the MCC shall collect and maintain a set of products for all Activities and shall compile a comprehensive TSDN for the entire project.

Table 2-1. Mapping Activities and Applicable TSDN Sections

Standards	Activities														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
General Documentation															
Special Problem Reports	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Telephone Conversation Reports	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Meeting Minutes/Reports	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
General Correspondence	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Engineering Analyses															
Hydrologic and Hydraulic Analyses	X	X		X	X	X	X	X	X						
Key to Cross-Section Labeling	X	X				X	X	X	X						
Draft FIS Report				X		X							X	X	
Mapping Information	X	X				X		X	X	X	X	X	X	X	X
Miscellaneous Reference Materials	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

SECTION 3—PERIOD OF PERFORMANCE

The mapping activities documented in this MAS will begin on September 12, 2003, and will be completed no later than March 31, 2006. The mapping activities may be terminated at the option of FEMA or King County in accordance with the provisions of the Partnership Agreement dated September 26, 2000. The mapping activities may be terminated by Snohomish County or FEMA in accordance with the provisions of the Partnership Agreement dated and September 10, 2003.

SECTION 4—FUNDING/COST-SHARING

FEMA is providing funding, in the amount of to King County for completion of the Flood Map Project documented in this MAS. This FEMA funding will mainly support the completion of activities conducted by the Local SC with some funding provided for the Contract Coordination and Project Administration activities performed by King County. King County also is providing LIDAR data, and digital aerial photography for the Lower Snoqualmie River. Snohomish County is providing LIDAR data, digital aerial photography, channel bathymetry for the Skykomish River, and cross-section data for

the Skykomish River. King County and Snohomish County shall provide any additional resources, conditioned upon sufficient legislative appropriations to fund the completion of the assigned activities, for this Flood Map Project. FEMA shall provide funding necessary to support those activities assigned to the MCC.

SECTION 5—STANDARDS

The standards relevant to this MAS are provided in Tables 5-1 and 5-2. Information on the correct volume, appendix, section, or subsection of the FEMA *Guidelines and Specifications for Flood Hazard Mapping Partners* to be referenced for each mapping activity are summarized in Table 5-2. These Guidelines are available for viewing or download from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/fhm/dl_cgs.shtm.

Table 5-1. Applicable Standards for Mapping Activities

Standards	Activities															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Guidelines and Specifications for Flood Hazard Mapping Partners, April 2003	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
American Congress on Surveying and Mapping Procedures	X	X	X													
Global Positioning System (GPS) Surveys: National Geodetic Survey (NGS-58), "Guidelines for Establishing GPS-Derived Ellipsoid Heights," November 1997	X	X	X													
Engineer Manual 1110-1-1000, *Photogrammetric Mapping* (USACE), July 1, 2002	X	X	X													
Engineer Manual1110-2-1003, *Hydrographic Surveys* (USACE), January 1, 2002	X		X													
Numerical Models Accepted by FEMA for NFIP Usage, January 11, 2002				X	X	X	X									
Content Standard for Digital Geospatial Metadata (Federal Geographic Data Committee), 1998		X	X					X	X	X	X	X	X	X		
Code of Federal Regulations (44 CFR Part 13), October 1, 2002																X
Document Control Procedures Manual, December 2000													X	X		

Table 5-2. Project Activities and Applicable Portions of FEMA Guidelines and Specifications

Activity Number	Activity Description	Applicable Volume, Section, Subsection, and Appendix
1	Field Surveys and Reconnaissance	Volume 1, Sections 1.2, 1.3, 1.4 (specifically Subsection 1.4.2.1) Appendix A, Sections A.4, A.5, A.6, A.7, and A.8 Appendices B, C, and M
2	Topographic Data Development	Volume 1, Section 1.4 (specifically Subsection 1.4.2.1) Appendix A, Sections A.2, A.3, A.7, and A.8 Appendix M
3	Independent QA/QC Review of Topographic Data	Volume 1, Section 1.4 (specifically Subsections 1.4.1 and 1.4.2.1) Appendix A, Sections A.2, A.3, A.7 (specifically Subsection A.7.5), and A.8 (specifically Subsection A.8.6) Appendix M
4	Hydrologic Analyses	Volume 1, Section 1.4 (specifically Subsections 1.4.2.2 and 1.4.2.4) Appendix A, Section A.4 Appendix C, Sections C.1 and C.7 Appendices H and M
5	Independent QA/QC Review of Hydrologic Analyses	Volume 1, Section 1.4 (specifically Subsection 1.4.1) Appendix A, Section A.4 Appendix C, Section C.2 Appendices H and M
6	Hydraulic Analyses	Volume 1, Section 1.4 (specifically Subsections 1.4.2.2 and 1.4.2.4) Appendix A, Section A.4 (specifically Subsection A.4.7) Appendix C, Sections C.3 and C.7 Appendices B, H, and M
7	Independent QA/QC Review of Hydraulic Analyses	Volume 1, Section 1.4 (specifically Subsection 1.4.1) Appendix A, Section A.4 (specifically Subsection A.4.7) Appendix C, Section C.5 Appendices B, H, and M

Table 5-2. Project Activities and Applicable Portions of FEMA Guidelines and Specifications (Cont'd)

Activity Number	Activity Description	Applicable Volume, Section, Subsection, and Appendix
8	Floodplain Mapping (Detailed Riverine Analysis)	Volume 1, Section 1.4 (specifically Subsection 1.4.2.3) Appendix C, Sections C. 4 and C.6 Appendices H, K, L, and M
9	Independent QA/QC Review of Floodplain Mapping (Revised Areas)	Volume 1, Section 1.4 (specifically Subsections 1.4.1 and 1.4.2.3) Appendix C, Sections C.4 and C.6 Appendices K, L, and M
10	Base Map Acquisition and Preparation	Volume 1, Sections 1.3 (specifically Subsection 1.3.1.8) and 1.4 (specifically Subsections 1.4.3.1 and 1.4.3.2) Appendix A, Section A.1 (specifically Subsection A.1.1)
11	DFIRM Production (Merging Revised and Non-Revised Information)	Volume 1, Section 1.4 (specifically Subsections 1.4.2.3 and 1.4.3.3) Appendices K, L, and M
12	DFIRM Production (Application of FEMA Graphics and Database Specifications)	Volume 1, Section 1.4 (specifically Subsections 1.4.2.3, 1.4.3.3, 1.4.3.9, and 1.4.3.10) Appendices K, L, and M
13	Preliminary DFIRM and FIS Report Distribution	Volume 1, Sections 1.4 (specifically Subsections 1.4.2 and 1.4.3) and 1.5 (specifically\ Subsection 1.5.1) Appendices J, K, L, and M
14	Post-Preliminary Processing	Volume 1, Section 1.5 (specifically, Subsection 1.5.2) Appendices J, K, L, and M
15	Project Coordination	Volume 1, Sections 1.1 (specifically Subsection 1.1.7), 1.3 (specifically Subsection 1.3.4), 1.4 (specifically Subsection 1.4.4), and 1.5 Appendix I

SECTION 6—SCHEDULE

The activities documented in this MAS shall be completed in accordance with the project schedule shown in Table 6-1. If changes to this schedule are required, the responsible Mapping Partner shall coordinate with FEMA and the other Mapping Partners in a timely manner.

Table 6-1. Project Schedule

ACTIVITY	RESPONSIBLE MAPPING PARTNER(S)	DUE DATE
Activity 1 – Field Surveys and Reconnaissance	King and Snohomish Counties	06/30/04
Activity 2 – Topographic Data Development	King and Snohomish Counties	04/30/04
Activity 3 – Independent QA/QC Review of Topographic Data	FEMA (MCC)	05/31/04
Activity 4 –Hydrologic Analyses	King County	03/31/04
Activity 5–Independent QA/QC Review of Hydrologic Analyses	FEMA (MCC)	04/30/04
Activity 6 – Hydraulic Analyses	King County	09/30/04
Activity 7 – Independent QA/QC Review of Hydraulic Analyses	FEMA (MCC)	12/31/04
Activity 8 – Floodplain Mapping (Detailed Riverine Analysis)	King County	03/31/05
Activity 9 – Independent QA/QC Review of Floodplain Mapping (Revised Areas)	FEMA (MCC)	06/30/05
Activity 10 – Base Map Acquisition and Preparation	King and Snohomish Counties	06/30/04
Activity 11 – DFIRM Production (Merging Revised and Non-Revised Information)	FEMA (MCC)	09/30/05
Activity 12 – Application of DFIRM Graphic and Database Specifications	FEMA (MCC)	09/30/05
Activity 13 – Preliminary DFIRM and FIS Report Distribution	FEMA (MCC)	10/31/05
Activity 14 – Post-Preliminary Processing	King and Snohomish Counties and FEMA (MCC)	03/31/06
Activity 15 – Project Coordination and Status Reporting	King County and FEMA (MCC)	--[1]
Activity 16 – Contract Administration	King County	--[1]

[1]Deliverables Due Throughout Duration of Project

SECTION 7—CERTIFICATION

The following certifications apply to this MAS (as appropriate):

Activity 1 (Field Surveys and Reconnaissance) and Activity 2 (Topographic Data Development)

A Registered Professional Engineer or Licensed Land Surveyor shall certify topographic information, in accordance with 44 CFR 65.5(c). Certification of topographic information by the American Society for Photogrammetry and Remote Sensing is also acceptable.

Activity 4 (Hydrologic Analyses), Activity 6 (Hydraulic Analyses), and Activity 8 (Floodplain Mapping)

- A Registered Professional Engineer shall certify hydrologic and/or hydraulic analyses and data in accordance with 44 CFR 65.6(f).
- Any levee systems to be accredited shall be certified in accordance with 44 CFR 65.10(e).

Activity 10 (Base Map Acquisition and Preparation)

- Community officials or responsible parties shall provide written certification that the digital data meet the FEMA minimum standards and specifications.
- The responsible Mapping Partners shall provide documentation that the digital base map can be used by FEMA.

Activity 8 (Floodplain Mapping– Detailed Riverine Analysis), Activity 9 (Independent QA/QC Review of Floodplain Mapping {Revised Areas}), Activity 11 (DFIRM Production {Merging Revised and Non-Revised Information}), and Activity 12 (Application of FEMA Graphics and Database Specifications)

The DFIRM metadata files shall include a description of the horizontal and vertical accuracy of the DFIRM base map and floodplain information.

SECTION 8—TECHNICAL ASSISTANCE AND RESOURCES

Project Team members may obtain copies of FEMA-issued LOMCs, archived engineering backup data, and data collected as part of the Mapping Needs Assessment Process from the MCC. The MCC may be contacted by telephone at (703) 317-6531 or by facsimile at (703) 329-3023.

General technical and programmatic information, such as FEMA 265, the Quick-2 computer program, and the MT-2 forms, can be downloaded from the FEMA Web site (http://www.fema.gov/fhm/). Specific technical and programmatic support may be provided through the MCC; such assistance should be requested through the FEMA MCC Project Officer specified in Section 11 of this MAS.

Project Team members also may consult with the FEMA Regional Project Officer to request support in the areas of selection of data sources, digital data accuracy standards, assessment of vertical data accuracy, data collection methods or subcontractors, and GIS-based engineering and modeling training.

SECTION 9—CONTRACTORS

King County, in consultation with FEMA and Snohomish County, intends to retain the services of a qualified contractor with required levels of expertise and experience for this Flood Map Project. King County shall ensure that procurement of contractors for work on this Flood Map Project complies with the requirements of 44 CFR 13.36.

Part 13 may be downloaded in PDF or text format from the U.S. Government Printing Office Web site at http://www.access.gpo.gov/nara/cfr/waisidx_02/44cfr13_02.html.

SECTION 10—FINANCIAL REPORTING

Because funding has been provided to King County by FEMA for the Flood Map Project documented in this MAS, financial reporting requirements for King County will be in accordance with Cooperative Agreement Articles V and VI.

SECTION 11—POINTS OF CONTACT

The points of contact for this Flood Map Project are Dave Carlton, P.E., the FEMA Regional Project Officer; Jeanne Stypula, P.E., the King County CTP Project Manager; Vaughn Collins, P.E., the Snohomish County CTP Coordinator; Dan Sokol, Washington State Department of Ecology, the State NFIP Coordinator; or subsequent personnel of comparable experience who are appointed to fulfill these responsibilities. When necessary, the assistance of the FEMA MCC should be requested through Max Yuan, P.E., the FEMA MCC Project Officer.

Each party has caused this MAS to be executed by its duly authorized representative.

Pam Bissonnette, Director
King County Department of Natural Resources and Parks

9/4/03
Date

Approved as to Form Only
Joe Rochelle, King County Prosecuting Attorney

9/4/03
Date

for Snohomish County
STEPHEN L. HOLT
Executive Director

9/10/03
Date
D-12

Approved as to Form Only
Gordon Sivley, Snohomish County Deputy Prosecuting Attorney

9/4/03
Date

Dave Carlton, P.E., Regional Project Officer
Federal Emergency Management Agency, Region X

9/5/03
Date

Dan Sokol, State NFIP Coordinator
Washington State Department of Ecology

9/4/03
Date

Max Yuan, Project Officer, Western Studies Team
Federal Emergency Management Agency

9-12-03
Date